

We claim:

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1. A lead-acid cell comprising a container, at least one positive plate and a negative plate disposed within said container, a separator disposed within said container and separating said positive and negative plates, said positive plate comprising a grid supporting structure having a layer of active material pasted thereto, said grid supporting structure comprising a lead-based alloy consisting essentially of lead, no less than about .8% tin; tin in a ratio to calcium of greater than about 12:1 and silver in the range of greater than 0 to about 0.02%, the percentages being based upon the total weight of said lead-based alloy.
2. The cell as defined in claim 1, wherein the ratio of tin to calcium is not less than 15:1.
3. The cell as defined in claim 1, wherein the ratio of tin to calcium is not less than 20:1.
4. The cell as defined in claim 1, wherein the tin content of said alloy is in the range of about .8% to about 1.5% and the silver content of said alloy is in the range of about .005% to about .017%.
5. The cell as defined in claim 2, wherein the tin content of said alloy is in the range of about .8% to about 1.5% and the silver content of said alloy is in the range of about .005% to about .017%.

6. The cell as defined in claim 3, wherein the tin content of said alloy is in the range of about .8% to about 1.5% and the silver content of said alloy is in the range of about .005% to about .017%.

7. The cell as defined in claim 1, wherein calcium is present in an amount of about 0.03% to about 0.055% and the ratio of tin to calcium is not less than 15:1.

8. The cell as defined in claim 7, wherein silver is present in a range of about 0.005% to about 0.020%.

9. The cell as defined in claim 1, wherein calcium is present in an amount of about 0.03% to about 0.055% and the ratio of tin to calcium is not less than 20:1.

10. The cell as defined in claim 9, wherein silver is present in a range of about 0.008% to about 0.015%.

11. The cell as defined in claim 1, further including from about 0.008% to about 0.03% aluminum.

12. The cell as defined in claim 1, contained in a maintenance free battery.

13. The cell as defined in claim 1, contained in a sealed battery.

14. The cell as defined in claim 1, wherein the container, positive and negative plates and the separator comprise an automotive battery.

15. A grid supporting structure for use in a lead-acid battery having at least one positive plate and a negative plate disposed within said container, a separator disposed within said container and separating said positive and negative plates, the grid supporting structure having a layer of active material pasted thereto, said grid supporting structure comprising a lead-based alloy consisting essentially of lead, no less than about .8% tin; tin in a ratio to calcium of greater than about 12:1 and silver in the range of greater than 0 to about 0.02%, the percentages being based upon the total weight of said lead-based alloy.

16. The grid supporting structure as defined in claim 15, wherein the ratio of tin to calcium is not less than 15:1.

17. The grid supporting structure as defined in claim 15, wherein the ratio of tin to calcium is not less than 20:1.

18. The grid supporting structure as defined in claim 15, wherein the tin content of said alloy is in the range of about .8% to about 1.5% and the silver content of said alloy is in the range of about .005% to about .017%.

19. The grid supporting structure as defined in claim 16, wherein the tin content of said alloy is in the range of about .8% to about 1.5% and the silver content of said alloy is in the range of about .005% to about .017%.

20. The grid supporting structure as defined in claim 17, wherein the tin content of said alloy is in the range of about .8% to about 1.5% and the silver content of said alloy is in the range of about .005% to about .017%.

21. The grid supporting structure as defined in claim 15, wherein calcium is present in an amount of about 0.03% to about 0.055% and the ratio of tin to calcium is not less than 15:1.

22. The grid supporting structure as defined in claim 21, wherein silver is present in a range of about 0.005% to about 0.02%.

23. The grid supporting structure as defined in claim 15, wherein calcium is present in an amount of about 0.03% to about 0.055% and the ratio of tin to calcium is not less than 20:1.

24. The grid supporting structure as defined in claim 23, wherein silver is present in a range of about 0.008% to about 0.015%.

25. The grid supporting structure as defined in claim 15, further including from about 0.008% to about 0.03% aluminum.

26. The cell as defined in claim 15, contained in a maintenance free battery.

27. The grid supporting structure as defined in claim 15, contained in a sealed battery.

28. The cell of claim 1, wherein the lead-based alloy is produced by increasing the tin content with a corresponding lowering of the silver.

29. The grid supporting structure of claim 15, wherein the lead-based alloy is produced by increasing the tin content with a corresponding lowering of the silver.

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